**GENERAL NOTES** DRAWING LIST CONDUIT PATHWAY AND ENCLOSURES TC0000 | TELECOM GENERAL NOTES AND DRAWING LIST TC0001 TELECOM ABBREVIATIONS AND SYMBOLS TELECOMMUNICATIONS ROOM DIMENSIONS ON THE DRAWINGS HAVE BACKBOX GENERAL REQUIREMENTS: BEEN TAKEN FROM PRELIMINARY ARCHITECTURAL DRAWINGS. THE SCALE TC0100 | TELECOM SITE PLAN OF THESE DRAWINGS ARE SUFFICIENTLY ACCURATE FOR DETERMINING THE a. PROVIDE 5"H X 5"W X 2-7/8" D OUTLET BACKBOXES WITH TC0201 TELECOM LEVEL 1 FLOOR PLAN LOCATION OF TELECOMMUNICATIONS INFRASTRUCTURE COMPONENTS, INTEGRATED CABLE MANAGEMENT AT LOCATIONS INDICATING DOUBLE GANG TC0202 TELECOM LEVEL 2 AND ROOF PLAN JUNCTION BOXES, OUTLET BOXES, WIREWAYS, PANELS, ETC. WHERE EXACT TC0301 | TELECOM LEVEL 1 REFLECTED CEILING PLAN b. PROVIDE DOUBLE GANG 5" SQUARE PLASTER RING ON ALL DIMENSIONS ARE INDICATED, THE REFERENCE SURFACE SHALL BE THE DOUBLE GANG OUTLET BACKBOXES UNLESS INDICATED OTHERWISE. TC0400 EXISTING TELECOM IDF ROOM 120 ENLARGED PLANS AND ELEVATIONS FINAL FINISHED SURFACE INCLUDING ANY ACOUSTICAL TREATMENT. CONTRACTOR TO COORDINATE THE REQUIRED DEPTH OF THE PLASTER RING TC0401 | TELECOM AV RACK ROOM 164 ENLARGED PLANS AND ELEVATIONS ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD AND ANY WITH THE WALL FINISHES. TC0500 TELECOM DETAILS c. INSTALL THE DOUBLE GANG BACKBOX AT PROJECT STANDARD DEVIATIONS CAUSING CHANGES EXCEEDING 1.5 INCHES TO THE INTENDED LOCATION OF MAJOR TELECOMMUNICATIONS INFRASTRUCTURE HEIGHT UNLESS OTHERWISE SPECIFIED. COMPONENTS MUST BE COORDINATED WITH THE ARCHITECT AND d. PROVIDE 4"H X 2-1/8"W X 2-1/2"D OUTLET BACKBOXES AT DESIGNER PRIOR TO INSTALLATION. LOCATIONS INDICATING SINGLE GANG BACKBOXES. e. PROVIDE SINGLE GANG PLASTER RING ON ALL SINGLE GANG OUTLET BACKBOXES UNLESS INDICATED OTHERWISE. CONTRACTOR TO ANY DEVICE HEIGHT DIMENSIONS SHOWN ARE SUGGESTED PLACEMENTS AND ARE PROVIDED FOR INFORMATION AND COORDINATION COORDINATE THE REQUIRED DEPTH OF THE PLASTER RING WITH THE WALL ONLY. COORDINATE ALL DEVICES AND DIMENSIONED LOCATIONS WITH INSTALL THE DOUBLE GANG BACKBOX AT PROJECT STANDARD PROJECT DRAWINGS. HEIGHT UNLESS OTHERWISE SPECIFIED. 4. ALL TELECOMMUNICATIONS DEVICES SHALL BE SECURELY MOUNTED PLUMB AND STRAIGHT TO WALLS. FLOORS, OR RACKS, PER THE 2. CONDUIT GENERAL REQUIREMENTS: MANUFACTURER'S RECOMMENDED MOUNTING PRACTICE, UNLESS OTHERWISE INDICATED IN THE TELECOMMUNICATIONS DRAWINGS. a. PROVIDE A MINIMUM (1) 1-1/4" ELECTRICAL METALLIC TUBING (EMT) FROM THE BACKBOX LOCATIONS TO THE NEAREST CABLE TRAY, INSTALL FIRESTOP ASSEMBLIES TO ALL THROUGH-SLAB AND ACCESSIBLE CEILING OR NEAREST IDF. CONDUIT FINISH MUST BE THROUGH-WALL PENETRATIONS FOR THE INSTALLATION OF ELECTROGALVANIZED. TELECOMMUNICATIONS CABLING AS REQUIRED TO MAINTAIN FIRE RATING b. ALL 1-1/4" FITTINGS AND COUPLERS SHALL BE SET SCREW TYPE OF ZINC-PLATED STEEL. DIE-CAST ZINC FITTINGS ARE NOT TO BE USED. OF SLAB OR WALL. REVIEW DRAWINGS FOR PARTITION TYPE RATINGS. FIRE PROOFING SYSTEMS USED FOR ALL PENETRATIONS MUST BE APPROVED BY c. CONDUITS TO BE SIZED BASED UPON THE NUMBER OF APPLICABLE AUTHORITIES HAVING JURISDICTION PRIOR TO INSTALLATION. CONDUCTORS AND THE SIZE OF CONDUCTORS TO BE INSTALLED. d. CONDUITS MUST TAKE THE MOST DIRECT ROUTE TO IT'S DESTINATION WITH NO BEND GREATER THAN 90 DEGREES OR AN 6. THE METHOD OF INSTALLATION FOR ALL TELECOMMUNICATIONS-RELATED BACK BOXES IN WALLS AND THE METHOD FOR PASSAGE OF AGGREGATE OF BENDS IN EXCESS OF 180 DEGREES BETWEEN PULL POINTS CONDUIT AND WIREWAYS THROUGH ACOUSTICALLY SENSITIVE WALLS OR PULL BOXES. **KEY NOTES** SHALL BE COORDINATED WITH THE ACOUSTICAL CONSULTANT OR OWNER e. CONDUITS SHALL NOT BE INSTALL IN CONTINUOUS SECTIONS PRIOR TO INSTALLATION. LONGER THAN 100 FT. IF RUNS TOTAL MORE THAN 100 FT. IN LENGTH, PULL POINTS OR PULL BOXES SHOULD BE INSERTED SO THAT NO SEGMENT 7. REFER TO ELECTRICAL SPECIFICATION AND DRAWINGS FOR BETWEEN POINTS/BOXES EXCEEDS THE 100 FT. LIMIT. INSTALLATION INSTRUCTIONS RELATED TO FLOORBOXES, JUNCTION BOXES, f. CONDUITS MUST BE BONDED TO GROUND ON AT LEAST ONE GROUNDING CONDUCTORS, BUSBARS, CONDUITS, CABLE TRAYS IN END IN ACCORDANCE WITH NATIONAL OR LOCAL REQUIREMENTS. CORRIDORS, METALLIC ENCLOSURES, ELECTRICAL PANELBOARDS, AND CONDUITS SHALL BE LABELED WITH A STAINLESS STEEL IDENTIFICATION TAG AT BOTH ENDS. ELETRCIAL CIRCUITING INFORMATION; U.O.N. h. CONDUITS SHOULD NOT BE RUN THROUGH AREAS IN WHICH 8. ELECTRICAL FEEDS ARE NOT TO BE RUN PARALLEL WITH VIDEO, FLAMMABLE MATERIAL MAY BE STORED, OVER OR ADJACENT TO BOILERS, AUDIO, OR TELECOMMUNICATIONS CABLING SEGMENTS OR RACEWAYS. IF INCINERATORS, HOT-WATER LINES AND STEAM LINES. ELECTRICAL FEEDS MUST BE RUN PARALLEL, A MINIMUM OF 4'-0" OF THE MINIMUM SEPERATION BETWEEN POWER AND THE COMMUNICATIONS CONDUITS SHALL BE 12". WHERE THE CONDUITS CROSS SEPARATION MUST BE MAINTAINED. THEY MUST CROSS AT 90-DEGREE ANGLES TO EACH OTHER. POWER RECEPTACLES SHOWN ON TELECOMMUNICATIONS 3. CONDUIT BEND RADIUS GUIDELINES: DRAWINGS ARE DEDICATED TO SPECIFIC TELECOMMUNICATIONS EQUIPMENT AND ARE SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR ENGINEERED ELECTRICAL SYSTEM AND a. IF THE CONDUIT HAS AN INTERNAL DIAMETER OF 2 INCHES OR ADDITIONAL UTILITY POWER RECEPTACLES. LESS THE BEND RADIUS MUST BE AT LEAST 6 TIMES THE INTERNAL CONDUIT 12. GROUND ALL TELECOMMUNICATIONS RELATED CONDUITS, CABLE b. IF THE CONDUIT HAS AN INTERNAL DIAMETER OF MORE THAN 2 TRAYS, AND JUNCTION BOXES IN ADDITION TO ANY APPLICABLE CODE INCHES THE BEND RADIUS MUST BE AT LEAST 10 TIMES THE INTERNAL c. CONDUIT BENDS SHOULD BE SMOOTH, EVEN, AND FREE OF KINKS OR OTHER DISCONTINUITIES THAT MAY HAVE DETRIMENTAL EFFECTS 13. CONDUIT ROUTES ON THE TELECOM DRAWINGS SHOW ONLY INTERCONNECTION BETWEEN THE TERMINATION POINTS AND APPROXIMATE ON PULLING TENSION OR CABLE INTEGRITY DURING OR AFTER ROUTES. THE EXACT ROUTE OF CONDUIT PATHWAYS ARE TO BE INSTALLATION. DETERMINED AND VERIFIED BY CONTRACTOR AND FIELD CONDITIONS. 4. DESIGNS WITH CONDUIT BENDS: 14. NOTIFY THE OWNER OF ANY DISCREPANCIES BETWEEN THE EXISTING a. IF A CONDUIT RUN REQUIRES MORE THAN TWO 90 DEGREE CONDITIONS AND THE TECHNOLOGY DRAWINGS. OBTAIN CLARIFICATION BENDS THEN PROVIDE A PULL BOX BETWEEN SECTIONS WITH TWO BENDS BEFORE PROCEDING WITH WORK. OR LESS. 15. IT SHALL BE THE RESPONSIBILITY OF THE TELECOMMUNICATIONS b. IF A CONDUIT RUN REQUIRES A REVERSE BEND (BETWEEN 100 CONTRACTOR TO VERIFY SIGNAL/CONDUIT PATHWAYS WITH THE DEGREES AND 180 DEGREES) THEN INSERT A PULL POINT OR PULL BOX AT ELECTRICAL ENGINEER'S DRAWINGS AND SITE CONDITIONS. EACH BEND HAVING AN ANGLE FROM 100 DEGREES TO 180 DEGREES. c. IF A CONDUIT RUN REQUIRES A THIRD 90 DEGREE BEND (BETWEEN PULL POINTS OR PULL BOXES) THEN DERATE THE DESIGN CAPACITY BY 15% FOR THIS ADDITIONAL BEND. 5. CONDUIT TERMINATIONS: REAM ALL CONDUIT ENDS AND FIT THEM WITH AN INSULATED BUSHING TO ELIMINATE SHARP EDGES THAT CAN DAMAGE CABLES DURING INSTALLATION OR SERVICE. b. CONDUITS THAT ENTER A TELECOM ROOM SHOULD TERMINATE NEAR THE CORNERS TO ALLOW FOR PROPER CABLE RACKING. c. TERMINATE CONDUITS THAT PROTRUDE THROUGH THE STRUCTURAL FLOOR 3 INCHES ABOVE THE SURFACE. d. MAINTAIN THE INTEGRITY OF ALL FIRESTOP BARRIERS FOR ALL FLOOR OR WALL PENETRATIONS. 6. COMPLETING CONDUIT INSTALLATION: a. CONDUITS SHOULD BE LEFT CLEAN, DRY, AND UNOBSTRUCTED. b. CONDUITS SHOULD BE LEFT CAPPED FOR PROTECTION. CONDUITS SHOULD BE LEFT LABELED FOR IDENTIFICATION. LEGEND CONDUITS SHOULD BE LEFT REAMED AND FITTED WITH BUSHINGS. e. ALL CONDUITS SHOULD BE EQUIPPED WITH A PULL CORD THAT HAS A MINIMUM TEST RATING OF (200 LB). 7. PULL BOXES: a. INSTALL PULL BOXES IN EASILY ACCESSIBLE LOCATIONS. b. INSTALL HORIZONTAL CABLING BOXES IMMEDIATELY ABOVE SUSPENDED CEILINGS. c. A PULL BOX SHOULD NOT BE USED IN LIEU OF A BEND. d. CONDUITS THAT ENTER THE PULL BOX FROM OPPOSITE ENDS WITH EACH OTHER SHOULD BE ALIGNED. e. FOR DIRECT ACCESS TO A BOX, PROVIDE A SUITABLE, MARKED, HINGED PANEL (OR EQUIVALENT) IN THE CEILING. THIS ACCESS PANEL CAN ALSO SERVE AS THE COVER FOR THE BOX. f. THE INSTALLATION OF THE PULL BOXES MUST BE COORDINATED WITH THE WORK OF OTHER TRADES. g. ALL PULL BOXES SHALL BE SEISMICALLY SUPPORTED FROM THE SLÄB OR OTHER STRUCTURAL MEMBER PER THE NEC CODE AND AUTHORITTY HAVING JURISDICTION. 8. PULL BOX SIZING GUIDELINES: CONDUIT | PULL BOX | PULL BOX | PULL BOX WIDTH (in.) LENGTH (in.) DEPTH (in.) FOR ADDITIONAL TRADE SIZE (in.) CONDUIT (in.) 1 1/4 20 3 3 1 1/2 27 36 4 8 2 1/2 10 42 5 12 3 1/2 12 54 6 6 60 ISSUE FOR BID VA Project Number: Seals and Signatures Drawing Title Project Title CONSULTANTS: ARCHITECT/ENGINEERS: TELECOM GENERAL NOTES AND 640-385 VA SIMULATION CENTER **SPAHCS** DRAWING LIST Building Number:

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ADDENDUM 3

Revisions

06/26/2014

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Drawing No.

**GENERAL NOTES** 

Drawn

RM

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Checked

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JUNE 26, 2014